

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

RECD 16 JUN 2005 WIPO PCT

Applicant's or agent's file reference PU030083	FOR FURTHER ACTION																									
	See Form PCT/IPEA/416																									
International application No. PCT/US04/07805	International filing date (day/month/year) 12 March 2004 (12.03.2004)	Priority date (day/month/year) 14 March 2003 (14.03.2003)																								
International Patent Classification (IPC) or national classification and IPC IPC(7): H04L 9/00, 12/28; H04Q 7/24, 11/00 and US Cl.: 713/153; 370/256, 338, 352, 359																										
Applicant THOMSON LICENSING S.A.																										
<ol style="list-style-type: none"> 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>5</u> sheets, as follows: <div style="margin-left: 20px;"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 4. This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> 			<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand 10 February 2005 (10.02.2005)	Date of completion of this report 31 May 2005 (31.05.2005)																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Ayaz Sheikh Telephone No. 571-272-3000																									

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/07805

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-8 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____

☒ the claims:

pages NONE as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* 9-13 received by this Authority on 10 February 2005 (10.02.2005)
pages* NONE received by this Authority on _____

☒ the drawings:

pages 1-4 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/07805**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>1-27</u>	YES
	Claims <u>None</u>	NO
Inventive Step (IS)	Claims <u>1-27</u>	YES
	Claims <u>none</u>	NO
Industrial Applicability (IA)	Claims <u>1-27</u>	YES
	Claims <u>None</u>	NO

2. Citations and Explanations (Rule 70.7)

Claim 1-28 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest selecting different authenticating mechanism for public WLAN environment which accommodates different client and operator capabilities, such as ISPs, mobile terminals, pre-paid providers, cellular operators .i.e. virtual operators..

----- NEW CITATIONS -----

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/07805

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 6-28 are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof: incorrect numbering of Claims. .

The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof: not executed in durable ink, photocopy marks, and no direct reproduction.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/07805

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

We Claim:

1. A method for controlling access by a user terminal to a communications network comprising the steps of:

- receiving from the user terminal a request to access the communications network;
- transmitting to the user terminal an identity request message;
- receiving from the user terminal, if the user terminal utilizes a predetermined authentication protocol, a response to the identity request message;
- determining whether the user terminal uses the predetermined authentication protocol in response to the response to the identity request message;
- selecting an authentication mechanism compatible with the user terminal upon determining the user terminal is not compatible with the predetermined authentication protocol, for allowing user terminal access to the communications.

2. The method according to claim 1, wherein the user terminal comprises a mobile terminal and the communications network comprises a wireless local area network WLAN that complies with the IEEE 802.11 standards.

3. The method according to claim 2, wherein the selecting step includes selecting an appropriate authentication server couples to the WLAN in response to the determination.

4. A method for controlling mobile terminal access to a wireless local area network (WLAN), comprising the steps of:

- receiving from the mobile terminal a request to access the WLAN;
- transmitting to the mobile terminal an identity request message;
- receiving from the mobile terminal, if the mobile terminal utilizes an IEEE 802.1x protocol, a response to the identity request message;
- determining whether the mobile terminal is IEEE 802.1x compliant in response to the response to the identity request message; and
- selecting an authentication mechanism, compatible with the mobile terminal in response to the determination, for allowing user mobile terminal access to the WLAN.

5. The method according to claim 4, further comprising the steps of, if the mobile terminal is IEEE 802.1x compliant, transmitting an authentication request to an authentication server and receiving an authentication response utilizing the IEEE 802.1x protocol, and controlling mobile terminal access to the WLAN in response to the authentication response.

6. The method according to claim 4, further comprising the steps of, if the mobile terminal is not IEEE 802.1x compliant, redirecting an authentication request to an HTTP server for utilizing a browser based authentication.

7. The method according to claim 6, further comprising the step of configuring a packet filtering module to redirect the authentication request to the HTTP server.

8. The method according to claim 7, further comprising the step of maintaining state information in the WLAN for use by the packet filtering module and the HTTP server.

9. The method according to claim 8, wherein the state information includes one of a first state indicative of ongoing authentication process, a second state indicative of authentication failure, a third state indicative of authentication success, and a fourth state indicative of a non IEEE 802.1x mobile terminal.

10. An access point in communication with a terminal device in a wireless local area network, comprising:

a means to determine whether the terminal device utilizes an IEEE 802.1x protocol and, if the terminal does not utilize said protocol, then the access point employing an authentication means compatible with the terminal device otherwise the access point employing an IEEE 802.1x protocol.

11. The access point in claim 10, wherein the means to determine includes communicating to the terminal device a Request-Identity EAP packet and if the mobile

terminal utilizes the IEEE 802.1x protocol the access receives a Response-Identity EAP packet.

12. The access point in claim 11, further comprises the means to configure an IP packet filtering to redirect the device HTTP request to a local server if the terminal device does not utilize said protocol.

13. The access point in claim 10, further comprises means to communicate IEEE 802.1x protocol exchanges and means to establish IP packet filtering through an IP filter module and state information for the HTTP server to control the terminal device access during and after IEEE 802.1x based authentication process if the access point detects that the terminal device is an IEEE 802.1x client.

14. A method for controlling access by a terminal device in a wireless local area network by determining whether the terminal device utilizes an IEEE 802.1x protocol comprising the steps of:

an access point communicating to the mobile terminal a request to identify, and if the terminal device utilizes an IEEE 802.1x protocol, acknowledging the request to identify, otherwise the access point determining that the terminal is not IEEE 802.1x compliant and selecting an authentication mechanism compatible with the mobile terminal.

15. The method according to claim 14, wherein the access point determines that the terminal is not IEEE 802.1x compliant when it does not receive an EAP identity response packet after a timeout value.

16. The method according to claim 15, further comprising the step of access point detecting that if the terminal device is not IEEE 802.1x compliant, then configuring an IP packet filter and redirecting a user HTTP request to a local server.

17. The method according to claim 16, further comprising the step of the local server communicating to the terminal device information specifically related to a browser based authentication.

18. The method according to claim 17, further comprising the step of the access point transitioning to a state if the terminal device utilizes the IEEE 802.1x protocol that indicates that the terminal device is IEEE 802.1x compliant and thereafter processing all communication utilizing the IEEE 802.1x protocol.

19. The method according to claim 17, further comprising the step of the access point transitioning to a state corresponding to browser based authentication if the authentication process fails.

20. The method according to claim 14, further comprising the step of the access point transitioning to a state corresponding to browser based authentication if the terminal device is not IEEE 802.1x compliant.

21. A method for controlling access of a terminal device in a WLAN by determining whether the terminal device utilizes an IEEE 802.Ix protocol comprising the steps of: communicating through the an access point to the mobile terminal a request to identify, and if the terminal device utilizes an IEEE 802.1x protocol, acknowledging the request to identify, otherwise determining by the access point that the terminal is not IEEE 802.1x compliant and selecting an authentication mechanism compatible with the terminal.

22. The method according to claim 21, further comprising the step of determining in the access point that terminal is not IEEE 802.1x compliant if it does not receive an EAP identity response packet after a preset time.

23. The method according to claim 21, further comprising the step of detecting in the access point that if the terminal device is not IEEE 802.1x compliant, then configuring an IP packet filter and redirecting a user HTTP request to a local server.

24. The method according to claim 23, further comprising the step of communicating from the local server to the terminal device, information specifically related to a browser based authentication.

25. The method according to claim 21, further comprising the step of transitioning to a state in the access point if the terminal device utilizes the IEEE 802.1x protocol that indicates that the terminal device is IEEE 802.1x compliant and thereafter processing all communication utilizing the IEEE 802.1x protocol.

26. The method according to claim 25, further comprising the step of transitioning to a state in the access point corresponding to browser based authentication if the authentication process fails.

27. The method according to claim 21, further comprising the step of transitioning to a state in the access point corresponding to browser based authentication if the terminal device is not IEEE 802.1x compliant.